

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended). A multi-band infrared imaging device, comprising:

in a single microbridge level, an ~~An~~ uncooled microbolometer focal plane array comprising at least plurality of pixels, each of said pixels further comprising at least one structure layer, a detector layer and a medium wave absorber layer, and wherein each said pixel simultaneously detects at least two IR bands.

Claim 2 (Original). The device according to claim 1, wherein said array is fabricated by LWIR processing.

Claim 3 (Currently Amended). The device according to claim 1, wherein said bands are selected from the group consisting of: MWIR/LWIR, MWIR/SWIR, SWIR/LWIR, ~~SWIR/MWIR,~~ and SWIR/MWIR/LWIR.

Claim 4 (Original). The device according to claim 1, wherein said structure layer is selected from at least one of the group consisting of: metal films, semiconductor films, and dielectrics.

Claim 5 (Original). The device according to claim 1, wherein said medium wave absorber layer is selected from at least one of the group consisting of: metal films, semiconductor films, and dielectrics with high MW absorption.

Claim 6 (Currently Amended). An optical stack for an uncooled microbolometer device, comprising:

in a single microbridge level, a read out integrated circuit (ROIC) substrate;
a reflector on a surface of said substrate;
a plurality of layers fabricated by LWIR processing, wherein said plurality of layers include an MWIR absorber, a detector, and at least one structure layer providing support and/or isolation;

a gap between said reflector and said plurality of layers; and wherein said stack is part of said uncooled microbolometer and detects at least medium wave radiation.

Claim 7 (Original). The stack according to claim 6, wherein said structure layer is selected from at least one of the group consisting of: metal films, semiconductor films, and dielectrics.

Claim 8 (Original). The stack according to claim 6, wherein said stack further detects LWIR and/or SWIR.

Claim 9 (Original). The stack according to claim 6, wherein said structure layer comprises at least one silicon nitride layer and at least one silicon dioxide layer.

Claim 10 (Original). The stack according to claim 6, wherein said detector is vanadium oxide (VO_x) or amorphous silicon.

Claim 11 (Original). The stack according to claim 6, wherein said MWIR absorber is selected from at least one member of the group consisting of: metal films, semiconductor films, and dielectrics with high MW absorption.

Claim 12 (Original). The stack according to claim 11, wherein said MWIR absorber is chrome, titanium nitride (TiN) or titanium tungsten (TiW).

Claim 13 (Currently Amended). A multi-spectral infrared (IR) focal plane array, comprising:
in a single microbridge level, an uncooled microbolometer detecting at least two infrared bands, said microbolometer comprising;

a generally planar read out integrated circuit substrate base;

at least one generally planar microbridge disposed approximately parallel to said base and separated by a gap; and wherein each said microbridge comprises a plurality of layers, said layers comprising at least one structural support layer, a detector layer, and selectively a medium wave absorber layer.

Claim 14 (Original). The array according to claim 13, wherein said array is selectively programmable to at least one of said bands.

Claim 15 (Original). The array according to claim 13, wherein said array is processed by LWIR techniques.

Claim 16 (Original). The array according to claim 13, wherein said at least one microbridge forms a two-dimensional array having at least one microbridge without said medium wave absorber layer.

Claim 17 (Original). The array according to claim 13, wherein said multiple IR bands are selected from the group consisting of: SWIR/MWIR, SWIR/LWIR, MWIR/LWIR, and SWIR/MWIR/LWIR.

Claim 18 (Original). The device according to claim 13, wherein each said microbridge of said array is arranged in a pattern having at least one said microbridge with said medium wave absorber and least one said microbridge without said medium wave absorber.

Claim 19 (Original). The array according to claim 13, wherein said medium wave absorber is selectively formed by a pattern etc.

Claim 20 (Original). The array according to claim 13, wherein at least one microbridge of the array is optimized for one of said bands and at least one microbridge of the array is optimized for one of said bands and at least one microbridge of the array is optimized for a different one of said bands.